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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/880,737   | 06/13/2001  | Ferencz S. Denes     | 032026:0538         | 4954             |
| 23524  | 7590        | 01/24/2005           | EXAMINER            |                  |
| FOLEY & LARDNER<br>150 EAST GILMAN STREET<br>P.O. BOX 1497<br>MADISON, WI 53701-1497 |             |                      | MAYEKAR, KISHOR     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1753                |                  |

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/880,737

Applicant(s)

DENES ET AL.

Examiner

Kishor Mayekar

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 24-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 39-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/01, 1/02, 11/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of invention of Group I, claims 1-23 and 39-43 in the reply filed on 28 October 2004 is acknowledged. The traversal is on the ground(s) that the method claims of Group I and apparatus claims of Group III are so closely related that the pertinent art with respect to the method claims will also be pertinent art for the apparatus and that the two set of claims do not require a separate filed of search. This is not found persuasive because the record reflects that all these groups are patentably distinct and have been properly considered.

The requirement is still deemed proper and is therefore made FINAL.

2. This application contains claims 1-23 and 39-43 drawn to an invention nonelected with traverse in the election filed 28 October 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 39-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 39, the phrase "nanoparticles of silver" lacks antecedent basis.

In claim 43, the claim is confusing as the repeating recital of the claim dependency on claim 39 and to the phrase "the dense medium produced by the method of Claim 39" when claim 39 is directed to a method of producing colloidal silver.

***Claim Rejections - 35 USC § 102 and § 103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 5, 6 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by BERKOWITZ et al. (4,416,751). The reference's invention is directed to a process for producing a ferrofluid. The reference discloses in the sole Figure and in Example 1 that the process comprises all the steps as claimed.

8. Claims 8-13 and 15 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over BERKOWITZ '751. The reference as applied above further discloses in Example 1 that the particles range in size from about 10 Angstroms to about 500 Angstroms. The disclosure in the prior art of any value within the claimed range is an anticipation of that range. And

where the range overlap disclosed by the prior, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the reference's teachings because overlapping ranges have been held to be obvious, *In re Wertheim* 191 USPQ 90.

As to the subject matter of claims 12, 13 and 15, the selection of the rotation speed and the gap would have been within the level of ordinary skill in the art.

9. Claims 1-15, 17, 21, 23 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of SMITH et al. (5,061,354) or SAVAGE et al. (4,731,515) in view of BERKOWITZ '751 and/or DENES et al. (5,534,232). SMITH (with BERKOWITZ as the co-inventor) discloses in a process for producing particles by spark erosion in a dielectric liquid that spark erosion is known to produce fine metallic powders of electrode materials and wherein the dielectric liquid is a hydrocarbon or distilled water (see section of Prior Art) and the use of an electric potential of 150 to 500 volts. SAVAGE shows in a method of making powders by spark erosion that spark erosion is known to produce fine metallic powders and wherein the dielectric liquid is a hydrocarbon or water (see

Background of the Invention). The differences between each of the references' known prior art are the provision of the recited electrodes and the recited step of rotating. BERKOWITZ as applied above shows in the sole Figure and in Example 1 the above limitation in a process for producing particles by spark erosion. DENES shows in a process for reactions in dense-medium plasma the above limitations and that nano-particles or powders are formed (Figs. 1 and 2; col. 8, lines 2-5; col. 12, lines 10-15, lines 25-28; and col. 3, lines 4-12 and lines 57-60). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified either of the teachings of references' known prior art as shown by BERKOWITZ and/or DENES because the selection of any of known equivalent arrangement of electrodes for producing the metallic powders by spark erosion would have been within the level of ordinary skill in the art.

As to the further difference of the subject matter in claim 39, the selection of any of known metals also would have been within the level of ordinary skill in the art.

As to the subject matter of claims 23, 42 and 43, if water is used in the references, the references' process would inherently possess the recited subject matter.

As to the subject matter of each of claims 2-15, 17, 21 and 39-41, the same is applied to the selection of each of the recited subject matters.

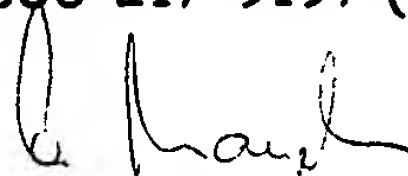
10. Claims 16, 18-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over SMITH '354 or SAVAGE '515 in view of BERKOWITZ '751 and/or DENES '232 as applied to claims 1-15, 17, 21, 23 and 39-43 above, and further in view of MASON (5,660,465). As BERKOWITZ and/or DENES shows the rotation step aids in recirculating of the dense fluid medium, the difference between the references as applied above and the instant claims is the provision of pins on the rotating electrodes. MASON shows in a device for mixing fluids the use of pins on an impeller for enhancing the mixing action (Fig. 2). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as shown by Mason as this would result in further enhancing the mixing action.



11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kishor Mayekar  
Primary Examiner  
Art Unit 1753